

A N  
E S S A Y

Concerning the  
M O R T A L I T Y,

Now prevailing among the H O R N E D  
C A T T L E , in several Parts of  
*Europe*, and chiefly about *London*:

Wherein a plain and successful Method is  
laid down to treat the diseased Cattle, and  
to prevent, in a good Measure, the rapid  
Progress of this fatal Disorder:

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By RICHARD BROCKLESBY, M. D.

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*Sæpe cibos fastidit inters & pinguis Taurus  
Prata tenens, lætam nec edit nec ruminat herbam.  
Se neque deterget lingua, sed inertia ponens  
Membra solo, caput huc tristis convertit & illuc;  
Grandibus ora madent lachrymis medicasque reposcunt  
Viscera cæca manus, —*

*Vanierii Prædium Rusticum, lib. iii.*

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T O

Dr. M E A D.

Most Honoured S I R,



*I* is not your high  
Character in Life,  
nor a fond Ambi-  
tion of being pa-  
tronized by the Mæcenas of  
our Age, but it is in parti-  
cular your superior Know-  
ledge of the Nature of Pe-  
stilential Diseases, that enga-  
ges me to address the follow-  
ing



#### iv DEDICATION.

*ing Pages to your Notice.  
The Sensus Communis, or  
Concern for the Publick,  
gives every Member of so  
happy a Constitution as ours  
an indisputable Right, to pro-  
pose whatever he apprehends  
serviceable to his Country:  
With this Apology for ap-  
pearing in Print at this Time,  
I shall beg Leave to subscribe  
myself, with the utmost Re-  
spect,*

Honoured S I R,

Your most Obligated,

Humble Servant,

*R. Brocklesby.*

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A N  
E S S A Y, &c.

**T**HE Care of the human Body, and the Cure of its Disorders, is certainly the proper, and immediate Subject of Medicine; yet, in order to the more successful, and perfect Exercise of that Art, it were to be wished something farther were taken in: For it does not seem probable, that the Security of Health, and the Removal of Diseases incident to the human Body, can be sufficiently  
B provided



provided for, whilst the Physician limits his Attention strictly to the human Body itself; because the close Dependency subsisting between us, and the lower Species of Beings, renders it probable, that the more we know of the Natures, and Constitutions of those Substances, vegetable and animal, by which the human Life is immediately supported, the better we shall be able to provide against the Injuries our own more delicate Frame is liable to, from these Substances daily taken in for its Nourishment: And by these Means we may hope to prescind, in a good Measure, the Source of some of the most formidable Diseases that afflict the human Race.

IT is, however, only at such Times as these, when an universal Contagion rages among the *Cattle*, that a Physician's Attention is thought necessary : But had the Method here proposed been more considered formerly, we might promise greater Success in our present Attempt.

THE Design of the following Pages is, to inform the Reader concerning the Rise, Nature, Progress, and probable Method of curing the present Disorder, that hath already proved extremely fatal to most *Cattle*, which have been attacked with it, and that may, in all Probability, sweep off several thousands more,



unless timely Precaution be taken to stop the Rapidity of its Progress, or, at least, to mitigate the frightful Symptoms, with which it is at present accompanied. With this View it may not be amiss to enquire into the Causes, which seem most likely to have produced the Disorder; and though these hereafter assigned will not admit of strict Demonstration, yet, to attain the Knowledge of the most probable Causes, in physical Matters, of such minute Speculation, is advancing nearest to the perfect Model of strict philosophical Enquiry.

By the superstitious Part of Mankind of all Ages, whatever  
Occur-



Occurrences have happened in human Affairs, out of the ordinary Tenor of Nature, have been commonly referred to some supernatural, or divine Cause, judicially exerting itself, in such Ways as these, to punish the flagitious Actions of particular Nations, or the general Corruption of the human Race.

*HIPPOCRATES*, near two thousand Years ago, declared, that Magicians and Hypocrites used to assign such Reasons out of Ignorance, and Want of Experience (*a*); while he very justly concludes all Disorders equally to result from a divine Hand. *Ho-*  
*mer* too, who lived long before  
*Hip-*

( *a* ) Περὶ Ἰγνείας Νόσου.

*Hippocrates*, in Conformity to the prevailing Religion of his Country, ascribes to *Apollo's* Arrows, and Shafts, that dreadful Pestilence, which proved so fatal to the *Greeks*, and their *Cattle*, before the Walls of *Troy*, whilst that Father of Poetry, as well as of Philosophy, intended (according to *Spondanus*) only to suggest to the wiser Part of Mankind, that the Cause of *Plagues* is in the Air, and that Brutes receive the Contagion first, because their Sense of Smelling is much more acute than the human:

Ὀυρῆας μὲν πρῶτον ἐπ' ὤχελο κ' ἑκὺνας ἀργαίς  
 Ἄυτὰρ ἔπειτ' αὐτοῖσι βέλος ἔχευεν κ' ἀφίει  
 Βάλλ'. ----

ILIAD. lib. I.

L A T E R



L A T E R Philosophers have endeavoured to satisfy Persons inquisitive about these Matters, with saying, The Air is infected with saline, arsenical Effluvia, which floating about in that Medium, enter into living Animals, by the Lungs, and Surface of the Body, at the same Time, that they so disturb the Crasis, and Contexture of the Blood, that a high Fever is immediately brought on, that hence the Salts are greatly exalted, and the Oils highly attenuated, which thereby becoming rancid, abrade the finer Vessels, so as of necessity to put an End to the Life of the Animal in a short Time. This Reasoning, however plausible, is far from

from being conclusive, in the present Case, since it takes for granted, what hath never yet been proved, *viz.* that the Air is at that Time, when contagious Disorders predominate, more replete with these arsenical Vapours, than at any other : So that, till this be done, we can never rest satisfied with a Solution, deduced from Postulata, which, for what we know to the contrary, are very widely remote from Truth.

A N D, though the late moist Constitution of the Air could not but have produced several remarkable Differences, in the solid Parts, as well as the Fluids of all Animals, by relaxing the Tone of the former; in consequence



quence of which the Fluids are more disposed to viscid, fizy Concretions ; in which State we shall afterwards see the Blood, in the first Appearance of this Disease) yet I can by no means think this a sufficient Account of the Matter in the present Case, because I myself was a melancholy Witness of this same Disorder, last Year, in *Holland*, and the neighbouring Provinces ; in which Places they are said to have lost upwards of 300,000 *Cattle*, from the first of its late Eruption in these Parts : Yet this happened after a tolerably dry Summer, and during the Winter Season there was more than two Months dry frosty Weather.

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THIS Observation confirms me too in the Opinion, that, though the late Season hath afforded a more than ordinary Produce of Grass and Herbage, on which the Cattle may be supposed to have gorged immoderately, yet I think a simple Repletion will hardly be allowed capable of producing such a Train of horrid Symptoms, in so short a Time.

AND therefore it is probable, that, over and above the Causes of the Indisposition already mentioned, (if these are indeed to be admitted for such) that there is a real Contagion to be taken into the Account, and that this Contagion



tagion is derived from that which so greatly ravaged the *Low Countries* last Year, and in former ones (ever since the Year 1711, when it made its first Appearance in *Europe*) travelled through *Italy, Tyrol, Germany, France, the Low Countries, Great Britain, and Ireland*, making every where such dreadful Havock, that Writers of these Times inform us, People came to be apprehensive of no less then a total Extinction of the whole *Cow-Race*.

How Contagions of all Kinds may be propagated, from one Place to another, that distinguished Honour of his Profession, Dr. MEAD, has at large related, in

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his

his learned Book of the *Plague* ; in which, from an immense Choice of undoubted Histories, he has skilfully selected the most striking Facts to this Purpose, that any Inquiry of this Nature can admit of; and particularly observes, that the Plague may be transmitted in any Materials of whatever Kind, brought from one Place infected to another, which before had no Contagion in it; and, that the greatest Danger is from such Goods, as are apt to retain Infection, such as *Cotton, Hemp, Flax, Paper, or Books, Silk* of all Sorts, *Linnen, Wool, Feathers, Hair*, and all Kind of *Skins*.



N O R do we know of any other Way, by which the *Plague* can be propagated into our temperate Climate, but by the immediate Transportation of some Body, that before lay in an Atmosphere, replete with tainted *Miasmata*. This too seems to have been the Opinion of Dr. *Sydenham*, from his declaring, That he does not suppose, the Constitution of our Atmosphere (however disposed to propagate a Pestilence, when once begun) sufficient of itself to bring on the Disorder: To this Effect he adduces an Instance of a certain Grand Duke of *Tuscany*, who, by carefully preventing all Communication, between his Subjects and

and his Neighbours around him, among whom the *Plague* at that Time made prodigious Devastation, precluded all Appearance of the Disorder from his own Dominions (*b*).

WE took Notice before, that this Disorder appears of a contagious Nature, and it is very easy to conceive how it might have been brought hither from *Holland*, as the Merchandize especially, imported into *England* from *Holland*, consists of such Things as are most apt to retain Infection. Nor do I think it a Reason, sufficient to exclude this Disease from belonging to some Class of the contagious Kind, that

(*a*) Sydenhami Opera, pag. 109.



that some Gentlemen have remarked, one Farmer's *Cattle* remain in perfect Health, in the midst of the diseased and dying Beasts of his Neighbours around him; for, by the same Parity of Reasoning, one may deny the *Small Pox* to be contagious, because some late Instances have been known, where Children had large Quantities of the variolous Matter innoculated into them, without a subsequent Infection of that Disorder? It were easy to bring equally surprizing Instances of Persons, escaping other Disorders, who had been no less obnoxious to the Contagion, if they had been predisposed for the Reception of them; and Dr. *Mead*, in the foregoing Treatise, hath the following



lowing Words ; *It is true, some have not been attacked by the Disease, (the Plague) though constantly attending about the Sick (c).*

B U T my present Purpose is only to point out such Evidences, as appear most striking to any common Reader, and which, I imagine, will convince such as are unprejudiced by any favourite *Hypothesis*, that this is really a contagious Disorder ; for it is too well known, when any Beast of the Herd is seized with this Disease, that, sooner or later, all or most of its Fellows are taken ill, and the Symptoms, with which one is attended, appear in

(c) *Vide pag. 16.*



in the rest, both old and young, the male as well as the female; only with this Difference, that the Males, so far as I have yet learned, are oftner saved than the Cows; which Observation prevailed in *Holland*, as well as here.

THE present Disease appears more fully to be of the contagious Kind, from an Observation made last Year in *Holland*: After several Farms had been, by the Excess of the Distemper, entirely evacuated of all the Cattle, the *States* provided, at their own Expence, a fresh Stock of healthy and sound Cattle, imported from *Denmark*, and other Parts, where the Disorder had not then

D                      reached,

reached, with which they supplied the reduced Farmers at an easy Rate : But these same fresh Cattle were no sooner brought to the Places, where the Infection had formerly prevailed, than, to the great Loss of the Country, the Contagion broke out afresh, and destroyed the greatest Part of the newly imported Cattle ; and, by authentick Accounts, I am assured, yet continues to carry off prodigious Numbers.

FROM what hath been already said, I presume the Disorder of the Cattle, at present reigning, will be judged infectious. The rendering this Conclusion probable, I reckon more conducive to the Purposes of a Cure, than



than any subtle Enquiry into the proximate Cause of the Disorder, as whether, that be owing to any particular Kind of Mineral Effluvia, or acid Vapours, arsenical, sulphurous, or putrifying Fumes, or to the Eggs of particular Insects, or to the malignant Influence of any neighbouring Planet, or farther remote Star: For these Enquiries, how plausible soever they appear to the Generality of Mankind, yet are usually supported upon vague, and erroneous Data, as widely different from Truth, and Nature, as the various Hypotheses of ingenious Men have always been from one another.

THE first Accounts we have of any Disorder of this Kind, since the Beginning of the present Century, are related by *Ramazini* (*d*), and *Lancisi* (*e*), two Physicians then living in *Italy*, where this Disorder first broke out, in the Year 1711, in the Territories of the Republick of *Venice*, round about the Country of *Padua*; and was said to have been brought from *Dalmatia*, a Province of *Turky*, by some Merchants importing living Cattle, according to their annual Custom, from that, and the neighbouring Parts. The Disease soon spread itself, through most Places of *Italy*, beyond the River *Po*, and was two Years after in the Dutchy

(*d*) *De Contag. Epid.* (*e*) *De peste Bovilla.*



chy of *Ferrara* ; where it so ravaged the Country, in the Years 1713 and 1714, that *Lanzoni*, a celebrated Physician of that Time, informs us, it was a prevalent Opinion the whole Species would quickly become extinct (*f*). From *Italy* it travelled through the *Tyrolese* into *France*. Shortly after *Germany* suffered, as well as the *Low Countries* ; and from these Parts it was supposed to have been transported into *Great Britain*, and *Ireland* : But I have not met with any Record of a new Infection, since the Year 1714 in our own Country, till lately, that it is probable we have again received the Infection from *Holland*,

(*f*) Vide *Lanzoni Observationes*.

*land*, where this same Disorder now reigns, having received its last Infection from some of the neighbouring Parts of *Germany*, and *Flanders*.

THUS we see this Disorder travels from the Southern Parts of the World to the Western, as *Pliny* (g) has long ago observed the *Plague* among the human Kind did ; and by the Analogy to be observed in the present Case, we may reasonably extend that Position of Dr. MEAD, that *Turky*, or other Countries towards the *Line*, are the only Birth-places of the *Plague*, with regard to *Europe*, in the human Species. For, in the same Way, I am apt to suspect this present Disease in  
the

(g) *Hist. Natural.*



the Brute Kind, has no other true *Locus Natalis*, but these Countries; and, as some exotic Plants, brought into Countries, far remote from their native Climes, will for a Season flourish, and seem to thrive; but, in the short Space of one, or two Summers, annually dwindle, and at length die away: So it is to be hoped, as all other contagious Disorders, on their first Appearance, are attended with the most frightful Symptoms, that this, which now fills the Land with Terror, will in some Time abate with us, as it has already done in other Parts of *Europe*, where it not long since ravaged with great Devastation among them.

It may not be amiss to advise People against alarming their Minds with groundless Fears, about the Contagion infecting the human Species, by eating the Flesh (as usual) of found Animals. It was known to Antiquity, that several Things, communicated immediately to the Mass of Blood, proved of fatal Consequence ; which, taken by the Mouth and Stomach, produced not any bad Effects. We find *Lucan* introducing *Cato*, at the Head of his Army, in one of the Deserts of *Africa*, encouraging his Soldiers, not to be under any Apprehensions of drinking freely of the Waters, that were there full of venomous Serpents ; for, though  
the



the Spring was actually replete with Particles, which communicated immediately to the Mass of Blood, must have proved inevitably fatal ; yet there was no such Danger in taking them by the Mouth, and Stomach :

*Neu dubita miles tutos haurire  
liquores,  
Noxia serpentum est admixto  
sanguine pestis,  
Morsu virus habent, & fata in  
dente minantur,  
Pocula morte carent ; dixit, du-  
biumque venenum  
Hausit ---- ( \* ).*

IN the same Manner it was,  
for some Hundreds of Years,  
esteemed the chief Method of

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curing

( \* ) *Lib. 9. v. 613.*

curing the Bite of a mad Dog, to force the Patient to eat the raw Liver of the rabid Animal (*b*); yet we have no Histories (so far as I know) of the morbid Symptoms being increased after this Practice.

THESE Instances may serve to alleviate the dreadful Apprehensions, which I have of late observed prevail over the Minds of many thinking Persons; for these are, in my Opinion, more likely to spread any Disorder, which may hereafter succeed, than all the pretended Malignity, arising from eating sound Flesh-meat, at this Time; for *Hippocrates* says very justly, one Body differs

(*b*) *Plin. Hist. Nat. lib. 29. cap. 5.*



differs from another, one Nature and Aliment from another ; and the Reason is plain, that there is an original Difference in the Texture, and Frame of different Species of Animals (*i*).

HOWEVER, to prevent any bad Effects of Flesh-meat at present, all that is now made use of, should be kept three, or four Days without Salt, and if it remain so long, in temperate Weather, without Signs of tainting, there is good Reason to imagine such Flesh wholesome.

UPON Trial of a Piece of Cow Meat, which died of the  
E 2 present

(*i*) *Propter dissimilem naturam dissimilesque  
Texturas inter sese primasque figuras.*

LUCRET.

present Disorder, I found it grow rancid, and tending to Putrefaction, – in about twenty-six Hours after the Death of the Beast ; so that, if Meat grow rancid, in two Days, after it is killed, at this Time, it were advisable to refrain from such Food.

BEFORE I dismiss this Part of the Subject, it may not be amiss to relate, what an arch Butcher told me, of an ignorant Countryman, who had often solicited him in vain for a Beef-steak ; at length the Butcher, tired with the Fellow's Importunities, determined to satisfy his Desire, and about three Weeks before my writing this, presented the Fellow with a large Slice of the diseased Meat ;



Meat ; for which the greedy Clown expressed his uncouth Thanks ; and, soon after he had eaten it, returned with fresh Solicitations for such another. The Fellow, however, after this large Quantity, has not yet suffered any Inconvenience in his Health, though indeed, it must be owned, he does not yet know whence the Meat came. Examples to this Purpose are related by *Lanzonius* (*k*) in the Dutchy of *Ferrara*.

I PROCEED to enumerate the Symptoms, as I have learned them from my own Observations, and from the most faithful Accounts of such Persons, who were attending

(*k*) Vide *Observat.* 202.

tending about the Cattle, through the whole Disorder. For ten Days or a Fortnight they are troubled with a dry Cough, (which is indeed not an uncommon Symptom among Cattle, at this Time of the Year, and therefore I do not consider it belonging to the present Disease) the Hair is rougher on the Skins than ordinary ; their Eyes look heavy, and, when the principal Disorder appears, they refuse Fodder, but have an insatiable Thirst for a time : The Milch-Cows decrease their Milk, which remains to a certain Quantity, sometimes for two Days, before it changes Colour, but at length turns yellow, and quickly after dries up. Upon ceasing to chew the Cud, a  
Shivering



Shivering seizes them all over, and a high Fever immediately comes on ; the Milk, if any remains to this Time, curdles over the Fire, but did not in the first of the Disorder. At first the Belly is costive, but for the most Part a Looseness succeeds within forty-eight Hours, after the shivering Fit. The Stools are at first green, and watery, and of a stinking Smell ; their Consistence however alters afterwards to a viscid, slimy Matter ; the Purging accompanies till about the seventh Day, and, about that time the Excrements become thicker, in such as recover ; and these soon chew their Cud again, and taste of Fodder, which they had before absolutely refused through the whole Disease.

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ALL that had not the Looseness before the third Day died. The Urine was very high-coloured, and in smaller Quantities. The Degree of Fever was observed very high; upon the third Day the Pulse beat near a hundred Times in a Minute, whereas the ingenious Dr. *Hales* (1) found a sound Ox's Artery not to exceed thirty-eight Pulses, in the same time. At different Intervals after the Attack, they all labour under a prodigious Difficulty, and Panting for Breath; some suffer these after the first Day, others not before the third. But this Disorder suffers Remissions, and seems to be augmented towards Evening,

(1) *Hæmastat.* pag. 43.



Evening, and at Night. Several Beasts discharge, towards the fourth or fifth Day, when ill, very great Quantities of a frothy Liquor, from the Mouth, and Eyes; others run actually purulent Matter from the Nostrils. As the Disorder advances, the Eyes sink more in their Orbits, and some were observed to be quite blind. Towards the Conclusion, the fore Parts of the Body, and particularly the Glands about the Head, are prodigiously swelled, and several Beasts had a universal Emphysema, or crackling of Air beneath their Skins, these that were not blooded equally with such as were. Frequently one may observe Pustules break out, on the fifth or sixth Days,

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all over the Neck and fore Parts. Some Cattle were raging mad on the first Day, such were necessarily killed ; some drop'd down dead suddenly ; others died on the third ; most on the sixth or seventh ; very few live to the fourteenth Day ; before Death the Horns and Dugs grow remarkably cold.

MOST of these Symptoms attended the Cattle, in the *Low-Countries* last Year, except the emphysematous Tumor, which I do not remember to have heard of before now : And *Lanzoni's* Description of the Disorder, in the Dutchy of *Ferara*, Anno 1713 and 1714, is so similar, that it may deserve to be inserted here,



“ *Correpti Boves cibum respue-*  
 “ *bant, aures subitò collapsæ pro-*  
 “ *cidebant, pili erigebantur, tre-*  
 “ *mor penè universalis aderat,*  
 “ *oculi lacrymabant, per nares*  
 “ *multa lymphæ copia exhibat, al-*  
 “ *vus solvebatur, in aliquibus*  
 “ *pustulæ sub cute prodibant, ita*  
 “ *ut variolis, boves ipsos affici*  
 “ *crederent, tandemque septem di-*  
 “ *erum brevi spatio, magno cum*  
 “ *cruciatu (ut ex mugitu appa-*  
 “ *rebat) moriebantur.*”

THE Blood, proceeding from  
 a Vein opened in the Beginning  
 of the Disorder, is commonly said  
 to be thicker than usual, though  
 the Blood of sound Cattle is al-  
 ways dense, and thick, (a) so that

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a very

(m) Ramazin de Cont. Epidem.

a very little Alteration, in the Crasis of such, may readily impose on Persons, more conversant with Blood of a more diluted, and attenuated Nature. But in the Progress of the Disorder the Blood becomes so very thin, and attenuated, that strong Spirit of Vitriol poured on, in no small Quantities, did not readily coagulate it, taken out of the Arteries immediately after Death.

THE Appearances in the dead Bodies of eight different Cows were as follow : The Flesh was of a sound Colour, and every where lined with Fat, the cellular Membrane between the Skin, and Flesh was distended with Air, to above the Thickness of three Inches.



Inches. The Paunch was prodigiously distended with Food in all of them, but it contained not any Thing preternatural ; nor indeed in the Reticulum, or second Stomach, were there any morbid Appearances ; but, upon Incision of the Omasus, or third Stomach, in which the Food is naturally without much Juice, a most offensive Stench rushed out, with a large Quantity of thin greenish Water.

THE Blood-vessels on the inner Surface of the Ventricle were very full. The Abomasus, and Part of the Intestines, discovered the like morbid Phænomena. The Liver, Spleen, and Kidneys were as usual ; but the Gall-bladder seemed to be in  
the

the greater Number fuller than ordinary ; the Consistence of some was thicker than the rest, and the Gall tasted disagreeably sweetish. I did not observe any purulent Matter investing the inner Surface of the Intestines, though other Gentlemen have discovered such, in some Cattle, if I am rightly informed ; but there appeared in some a slimy Mucus, all along the intestinal Canal.

T H E Lungs universally shewed the strongest Signs of a preceding high Inflammation ; most of them were turgid with red Blood, while the smallest Vesicles of the Bronchia, or Air-vesicles, were very much inflated :  
Some



Some few arterious Vessels were replete with a gelatinous, glairy Mucus, and all the Lungs appeared larger, than they do in common. The whole inner Surface of the Trachæa, or Wind-pipe, was covered with a frothy Mucus; but I never found any Ulcers, with purulent Matter either at the Root of the Tongue, or in the Lungs. Upon opening two or 3 Heads, I found large Quantities of extravasated Serum; and the Blood retained its Fluidity in the larger Vessels long after Death.

THESE Appearances nearly coincide with those discovered at Dissections, made last Year in the *Low Countries*. I have not taken Notice of the black Colour of the

the inner Coat of the Stomach, and Intestines, because *Peicerus* says, this may be natural to sound Animals : “ *Varia specie ludit*  
 “ *color, Juvenculis albidus est,*  
 “ *flavus, aut ex utroque mixtus,*  
 “ *adultis nigricat livore plumbeo,*  
 “ *unius noctis maceratione, tanto-*  
 “ *pere mollescit, ut abstrahi, &*  
 “ *avelli nequeat.*” (n)

W H E N one considers all these Facts thus collected, there is no great Reason to doubt of the Nature of the Disorder, which appears to me, to be a most acute, and violent Fever, attended with a particular Contagion; and this is, after some Time, accompanied with a Peripneumony, and Inflammation of the Stomach, and

Inte-

(n) *De Ruminatione*, L. II. C. 2.



Intestines. The Peripneumony seems to be produced by the preceding high Fever, as this Disease, according to *Boerhaave* (*n*), is the proximate Cause of Death, and the ultimate Effect of all Disorders which are fatal. Now the chief Indication of Cure seems to be, so to moderate, and conduct the Efforts of Nature, in the two Stages, into which it appears necessary to divide the Course of this Disorder; that in the first (which I think in general may be limited to the sixth Day) she may not, by too violent Efforts to discharge the morbid Contagion, produce such Perturbations in the animal Frame, as will of necessity dissolve the Union of its Principles. In the

G                      second

(*n*) *Aphor. de Peripneumonia.*

second Stage of the Disease, that End, to which Nature wisely directs, ought to be pursued by the best Means we are capable of.

FROM a sufficient Number of Data, the Truth of the following Proposition is evident; Nature brings on a Fever, in order to throw off the contagious Miasmata received into the Body; yet such is the Nature of a Fever, that the Fluids, as well as the Solids, of every Animal, are often disposed to carry it to too great a Height; and therefore loudly call for the most speedy Methods of preventing its Progress: But the shortest Way of effecting this, is to diminish the Cause of the Fever, that is, the Momen-



Momentum, or Quantity of Motion in the Blood ; this may be done either by lessening the Velocity, or the Quantity of Matter, or both together. But the Velocity of the Blood is, in a great Measure, owing to a new Impetus received from the Solids, reacting upon the transient Blood, in Proportion to the Force which acted upon them ; so that, by diminishing the Quantity of Matter, you take away from the remaining Mass, not only its lately acquired Velocity, but likewise a two-fold Power, that it just before had, of increasing the Fever, by being, in the first Place, overcharged with infecting Particles ; and secondly, by augmenting the propelling Power of the

G 2                      Solids.

Solids. So that three strong Reasons naturally urge one to imagine, where the Pulse is very high and quick, in the Beginning of any Fever, of whatever Kind, that sufficient Blood-letting is always requisite ; and, after this has been timely administred, to endeavour to prevent the Humours from growing putrid, to which State they necessarily tend upon all violent Agitations ; this Intention well satisfied will compleat the Cure of the first Stage.

FOR these Reasons, compared with what was discovered of the Nature of the Disorder, there appears to me the highest Necessity of large, and repeated Blood-lettings, in the Beginning of the  
present



present Disease. I say in the Beginning, as I apprehend the same Inconveniences will attend deferring plentiful Evacuations by Blood-letting in the present Case, as were observed with regard to the Cure of the *Plague*, in the human Species : For it is recorded by the best Authors upon that Subject, that plentiful Bleeding, administered immediately upon the Patient's being seized, was of the highest Advantage, and greatly promoted the Recovery ; but if it was deferred only a few Hours, it rather oppressed the Patient, than alleviated the Symptoms. The Quantity to be taken away should always be determined by the Strength of the Fever, and the Violence of its Symp-

Symptoms ; but I am well aware of the Obscurity most People would complain of, in this Manner of Writing, and therefore I shall propose a certain Medium, which, after repeated Trials, hath been discovered the most effectual.

T H E ingenious Mr. *John Gravener*, Surgeon, (to whose unwearied Diligence the Public is more indebted upon the present Calamity, than would be proper for me to say at this time) has, after a Variety of Trials, and faithful Observations, assured me, he found most of the Cattle, which have been saved by the Method here to be proposed, lost, in the Course of the Disorder, about



bout eight Quarts of Blood, or rather more than that Quantity, taken at proper Intervals ; and I cannot but do him some Part of the Justice due to his Merit, by testifying, that he has had more Success, than has been obtained by any other Method, that hath hitherto been proposed, having in one Place saved three Beasts out of six ; in another nine out of twenty-four which were committed to his Care ; and it is very remarkable, that only eight were saved out of the remaining Herd, amounting to upwards of seventy-two in Number, which were all treated after various Methods, different from his. Whoever pleases to inquire of Mr. *Rhodes*, Farmer near *Islington*, will be assured of the Truth of this Fact.

*Directions*



*Directions to Farmers, how to  
treat infected Cattle.*

**B**EFORE the Cattle are seiz'd, I recommend, as soon as possible, two Seatons, or Pegs, to be put deep into the Dewlap, and into the under Part of the Neck, and immediately, upon refusing Fodder, the Beast should have three Quarts and a Pint of Blood taken away ; and, after twelve Hours, two Quarts more ; after the next twelve Hours about three Pints may be let out ; and after the following twelve Hours diminish a Pint of Blood from the Quantity taken away, at the preceding Blood-letting ; lastly, about a single Pint should be taken away, in less than twelve Hours after the  
the



the former Bleeding; so that, when the Beast has been blooded five Times, in the Manner here proposed, the worst Symptoms will ('tis hoped) abate; but if the Difficulty and Panting for Breath continue very great, I see no Reason against repeating Bleeding, or at least against taking away the fifth Time instead of a single Pound, twice that Quantity.

I N the mean Time, the Sea-tons, or Pegs, should be daily promoted to Suppuration, by moving the Cord; and the Cattle should have as much Bran-water, as they chuse to drink, lukewarm: This should be made a little tart, or sourish, either with common Vinegar, or Spirit of Vitriol; and, immediately after

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the first Bleeding, they should have the following Drench :

Take of Camphire one Dram and half ; dissolve it in two Ounces of Honey ; add of Salt-petre one Ounce and half : Mix these in a Pint and half of Water-gruel, and give this Drench immediately after each Blood-letting, but the last ; that is to say, you are to give no more than four of these Drenches.

DURING the whole Disease, the utmost Care imaginable must be used, to keep the sick Cattle very warm, not only by housing them, but by covering them with old Hop Bags, or such Things,  
and



and giving them Plenty of fresh, dry Straw to lie on; for it is apprehended, unless especial Regard be paid to this Circumstance, no Medicines will be found efficacious enough to remove the Disease; therefore all Holes in the Cow-houses ought to be carefully stopped up with Straw, so as to prevent the Current of Air through such Places.

I F, after forty-eight Hours, the Body is not loosened by these Drenches, it would be adviseable to add a little sweet Oil to the following Drench :

Take an Ounce of Powder of  
wild Valerian Root, two  
Drams of *Virginia Snake*  
*Root*, and mix them in a  
H 2 Pint

Pint and half of Water-gruel  
for a Drench ; add to it of  
sweet Oil one Gill.

THIS Drench should be repeated after every twelve Hours ; and, if the Purging come on before the third Day, it is apprehended the Gill of Sallad Oil ought to be omitted, lest it increase the Purging to too great a Degree. If the Stools continue liquid to the eighth Day, then it may be adviseable to add to the *Valerian* Drench without Oil, one Ounce of Venice-treacle ; and, if this does not moderate the Purging, to repeat the same Quantity of Venice-treacle in twelve Hours after, continuing from the Beginning of the third Day,



Day, the *Valerian* Drench every twelve Hours : After that Time it is presumed, that there is no farther Occasion of adding Vinegar to the Bran-water, which ought frequently to be offered to the sick Cattle all the Time of the Disorder. If the Purging appear to weaken the Beasts exceedingly, a Handful of Whiting may be added to every Gallon of Bran-water in the Boiling ; and in some Cases it may be proper to give a Dose of Venice-treacle even on the sixth Day : After which, if the Crackling of Air be very great beneath the Skin, several Incisions should be made in the most dependent Parts of the swelled Places ; by which Means so many more Outlets are granted to



to the morbid Humours. And, by carefully following these Precepts, many Cattle may, in all Probability, get over the Disease; which is indeed so dangerous in itself, that I think no Man, that fully comprehends its Nature, will pretend to any specific Remedy; and for that Reason to save a certain Number, that would otherwise be lost, is all I pretend to promise from the Method here laid down. The second Stage of this Disorder will be easily cured, by promoting the Discharge by the Seatons and Incisions made into the Skin, all which should be rubbed daily with equal Parts of Hog's-lard and *Swedish* Tar.

BUT



BUT as several Gentlemen of that *Profession*, whereof I have the Honour to be one, may be willing to know the Reasons of the Method here proposed, I shall briefly point out the Chief. *First*, The particular Office of the Cow's first Ventricle induces me to prefer the Administration of internal Medicines in a liquid Form ; for their Paunch always contains unmacerated Food only, without any Liquid. This solid Food, after lodging a sufficient Time in that Receptacle, is again brought into the Mouth, and, after Trituration there, is conveyed into the Reticulum and Omasus, without mixing with the Food in the Paunch ; but all, or most of their Drink, is admitted  
by

by a particular Passage from the Oesophagus, immediately into the third Stomach ; for if Liquids were to mix with the vegetable Substances in the first Stomach, there would be constant Danger of its bursting, as it contains frequently fifty Pounds Weight of Food (\*); and these Creatures take in at once such large Quantities of Drink as of solid Food ; besides the Liquor of the Stomach could not act with so much Advantage, as it does now, if it were to be constantly diluted with so great a Proportion of Water, as they take in at one Time ; for which Reason, says *Peyer*, “ *Prudentissime curavit Natura, efformato canali, ut potulenta,*  
“ *quæ*

( \*) *Peyer de Rumin. Lib. ii. cap. 2.*



“ *quæ alibi incommoda fore præ-*  
 “ *videbantur, ad tertium quar-*  
 “ *tumque ventriculum ocys tra-*  
 “ *ducerentur ( \* ).*” But, as the  
 Cattle cease to chew their Cud,  
 from the first Appearance of this  
 Disorder, there are no great  
 Hopes of Advantage from any  
 solid Medicines, which must go  
 first into the Koilia, and there  
 remain till the Beast begin to  
 chew its Cud again.

*Secondly*, I recommend the  
 Addition of Camphire, mixed  
 with Nitre, against the growing  
 Inflammation, from the Autho-  
 rity of *Hoffman, Etmuller*, and o-  
 ther noted Practitioners, as well as  
 from the Anodyne Virtues I have  
 experienced, upon taking it inward-  
 I ly

( \* ) *De Ruminat. lib. ii. cap. 3.*

ly myself ; and also for the Support of the Spirits, after losing so large a Quantity of Blood. The Quantity does not seem too great in the present Case, because I myself, desirous to try its Virtues on the human Body, have taken it to near half a Dram, without observing any other Effects after it, than a more composed Night's Rest, and a gentle Diaphoresis. It must be owned, this is an additional Medicine to these, which have been attended with such eminent Success, in Mr. *Gravener's* Practice : But as there appears one constant Tenor in Nature, to endeavour at a Crisis, by the Swelling and Emphysema, which in these Creatures, I apprehend, are analogous



gous to the pestilential Buboes in the axillary Glands of the human Body; for that Reason I keep it always in View, by endeavouring at such Medicines as are antiphlogistic, and at the same Time support the animal Spirits; and when the Fever is, by repeated Bleeding, reduced to such a Degree, that a Gangrene, or Rupture of the Vessels, is not to be apprehended any more, to promote the Flux of the Humours towards the Surface of the Body, is only cooperating with the Intentions of Nature, which always acts for the best in given Circumstances.

It only now remains to speak of the Diarrhea, accompanying



this Disease, which, if it does not appear on the third Day, is a fatal Symptom. This induces me to consider it as a critical Discharge by Stool : That Fevers of various Kinds had a Crisis by bilious Purging, on different Days, appears from *Hippocrates* himself ( † ), and therefore, to stop this Purging in the Beginning of the Disease, is directly to counter-act the Purposes of Nature, and, instead of obeying her wise Dictates, to trust ourselves to chimerical Fancies, founded upon erroneous Hypotheses, which only exist in luxuriant Imaginations. There is indeed a certain Time, when the Diarrhea, by

( † ) Ἑβδομαίοισιν ἢ ἐνναταίοισιν ἢ τεσσαρεσ-  
καιδεκαταίοισι κοιλίης ῥύσις χολώδης καὶ δυσεντερι-  
ώδης λύεσιν ἐπὶ τὸ πᾶν τὰς πυρελῆς. *Coacæ*  
*Prænotiones*, pag. 534. *V. Linden.*



by long Continuance, must have greatly exhausted the Cattle's Strength, and the Force of the Disorder ; this is the Time, and not before, when the Intention of the Practitioner should be directed to support languishing Nature, and to check gradually the Excess of the Purging : For all spontaneous Vomiting and Purging, that discharges the morbid Matter in Fevers, is of Service, and the Patient easily bears it ; but these Evacuations, that carry off too much of the Humours of the animal Body, without Relief, are always hurtful (\*).

THE Emphysema, observed in the last Stage of the Disease, may be

(\*) *Hippoc. Lib. i. Aph. 2.*



be supposed to arise from two Causes in some of the Cattle; first when the Blood hath suffered such long continued Agitations, in the vascular System, it will become at length extremely fluid, and lastly tend a good deal towards a State of Putrefaction, in the mean time that the Heat is greatly augmented; so, if the Heat and Putrefaction arrive to a sufficient Degree, the unelastic Air in the Blood, will become expansive, for the honourable Sir *Isaac Newton*, observes, That “ true permanent  
 “ Air arises by Fermentation or  
 “ Heat, from those Bodies which  
 “ the Chymists call fixed,  
 “ whose Particles adhere by At-  
 “ traction, and are not therefore  
 “ separated and rarified without  
 “ Fermen-



“ Fermentation ; those Particles  
 “ receding from one another with  
 “ the greatest repulsive Force,  
 “ and being with most difficulty  
 “ brought together, which upon  
 “ contact were most strongly u-  
 “ nited. (a)” I will not take  
 upon me to say absolutely that the  
 Emphysema, is not owing to e-  
 lastic Air generated by the Putre-  
 faction and heat in the Blood ;  
 but I am more apt to imagine,  
 that under the Skin is taken in  
 by the Lungs ; for when the Ex-  
 tremities of the pulmonary Artery,  
 are in several Parts obstructed,  
 and a constantly new impelling  
 Force of the Heart acts upon the  
 Sides of the little Artery, the ob-  
 structing Matter will be more im-  
 packed ;

(v) Vide Query 31st.

packed, and consequently the  
 contiguous Bronchia, or smallest  
 Air Vesicle cannot be distended,  
 as much as is requisite, therefore  
 other Vesicles must receive more,  
 than their Share, whence it comes  
 to pass, that the Air pervades the  
 Fibres of the Bronchia, which  
 are very easily distensible, and by  
 that Means, passes with the ve-  
 nous Blood into the left Auricle,  
 and Ventricle, to be sent to the  
 farthest Extremities, but the cel-  
 lular Membrane is the least able  
 to resist the expansive Force of  
 the Air, when heated in the Blood,  
 therefore we find it so much di-  
 stended in the present Case; the  
 Use of the Seatons, as well as of the  
 Incisions, above proposed, is to  
 give



give a free Egrefs to this confined Air.

IF it be univerfally agreed, that putrid, and corrupting Animals, expofed to the Heat of our Atmosphere, have any Influence, in propagating peftilential Diforders, I muft, at this Time, beg leave to differ from the Sentiments of fome great Men, who have recommended to the Farmers, to cover the dead Beafts in the Pits, with fresh Lime, by which Means, whenever the Lime comes to act upon them, instantly arifes that fiery, incoercible Spirit, which, *Boerhaave* fays juftly, is the moft volatile of all Bodies known, and when any Quantity of it is collected, and applied to the hard-

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est Part of a living Animal, it very quickly brings on a Gangrene, and Sphacelus. Now what can be expected from this Practice, but to fill the Air with these caustic Particles, not only from the Negligence of the Farmers, in letting the Lime lie some time on the dead Beasts, before they are covered with Earth, but because, the Volatility of this Salt is so great, that it will easily pervade the small covering of Mould, which they put on at first ; and the Effect of quick Lime upon animal Substances, is found to produce a higher Putrefaction, immediately upon contact, than a whole Week's Exposition of the dead Body to the open Air could do, and as these, who sophisticate

Spirits



Spirits of Sal Armoniac, can witness, that much stronger Spirits are obtained, and in greater Quantities, by adding quick Lime, than by any other Method : So, in the present Case, much greater Quantities of putrid Fumes are raised, by the Addition of quick Lime, than could be, if the Cattle were permitted to rot in the open Air. I mention these Observations, in Hopes that proper Orders may be again renewed to all Persons, concerned about Cattle, to have them buried, at least ten Foot deep, and immediately covered, without Lime ; which is indeed to be preferred to all other Methods. But, if this Practice be too troublesome and expensive, when the Far-

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mers,

mers, by covering with a Bag of quick Lime, can reserve the Charges of filling up the Pit, for three or four Weeks longer, till all the Cattle are either dead or recovered ; by which Time the quick Lime hath rendered most of the animal Salts volatile, and thereby possibly may have spread the Putrefaction. Upon these Considerations, with the utmost Deference, I submit to the Judgment of others, if it were not more adviseable to burn the Bodies immediately after Death ; which Practice was used in the most remote Times of Antiquity, and prevails in some Places to this Day (·). But I am far from recommending this Method upon any other Account, than as it is prefe-

(·) Πυράδ δὲ νεκρῶν καὶ νεκρῶν θάψεται. *Iliad* I.



preferable to that unspeakably bad Custom of covering them with quick Lime, being fully conscious of some Inconveniences, which necessarily attend Burning, such as that of destroying the *Pabulum Vitæ* in the Air, and that of spreading, though in a less Degree, the putrid Fumes, which always arise when any animal Substance is heated to a certain Degree ; and lastly, that of raising the Panick of Fear in People's Minds, by exposing to publick View such frightful Sights of Woe : Upon which Accounts there is no Method that can be proposed with Safety to the Publick, but to enjoin these Persons concerned to bury their Dead immediately, at least eight  
or

or ten Feet deep in the Earth ;  
 which extraordinary Expences to  
 the impoverished Farmer, it is to  
 be hoped the Government will  
 take under their wise Considerati-  
 on, and enforce the Performance of  
 this Method by some Penalties,  
 to be inflicted in Default of Com-  
 pliance.

**F I N I S.**



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